

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the present application:

Claims 1-4 (Cancelled).

Claims 5-6 (Cancelled).

Claim 7 (Cancelled).

8. (Previously Presented) The apparatus process of claim [[5]] 35 wherein the inlet transition section comprises a domed geometry.

9. (Previously Presented) The apparatus process of claim 8 wherein the inlet transition section is a reactor head comprising a flanged connection to the downstream process section.

10. (Currently Amended) The apparatus process of claim [[5]] 35 wherein the inlet transition section comprises a conical geometry.

11. (Currently Amended) The apparatus process of claim 10 wherein the inlet transition section is a reactor head comprising a flanged connection to the downstream process section.

12. (Currently Amended) The apparatus process of claim [[5]] 35 further comprising one or more sight glass nozzles.

13. (Currently Amended) The apparatus process of claim [[5]] 35, wherein a laminar velocity profile is achieved in the downstream process section using at least one of:

- a) a sufficient length of straight pipe comprising the inlet piping section to provide laminar flow at an upstream end of the inlet transition section;
- b) at least one flow straightener comprising a rotation vane and disposed within the inlet piping section;

- c) a large angle diffuser at the upstream end of the inlet transition section;
- d) an elliptical head diffuser at the upstream end of the inlet transition section; and
- e) a conical interior surface comprising the transition section.

Claims 14-17 (Cancelled).

Claims 18-21 (Cancelled).

Claims 22-33 (Cancelled).

Claim 34 (Cancelled).

35. (Previously Presented) A process of producing hydrogen cyanide comprising:
- a) providing at least one hydrocarbon, at least one nitrogen containing gas, and at least one oxygen containing gas;
 - b) reacting the at least one hydrocarbon, at least one nitrogen containing gas, and at least one oxygen containing gas in an apparatus to form hydrogen cyanide, and
 - c) supplying heat by a simultaneous combustion reaction with the at least one oxygen containing gas in the apparatus;

wherein the apparatus comprises:

an inlet piping section with a first cross-sectional dimension;

a downstream process section with a second cross-sectional dimension; and

an inlet transition section connecting the inlet piping section and downstream process section;

wherein the inlet transition section comprises internal insulation comprising refractory ceramic fiber and wherein the internal insulation forms a conical interior surface within said inlet transition section.

Claims 36-47 (Cancelled).

Claims 48-54 (Cancelled).

Claims 55-66 (Cancelled).